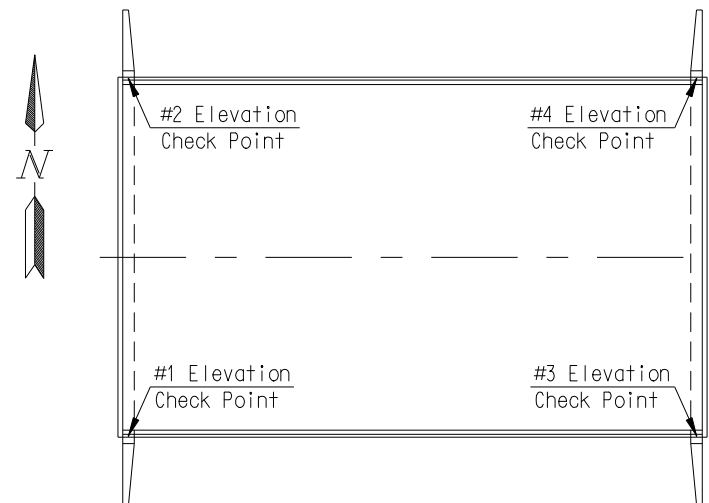
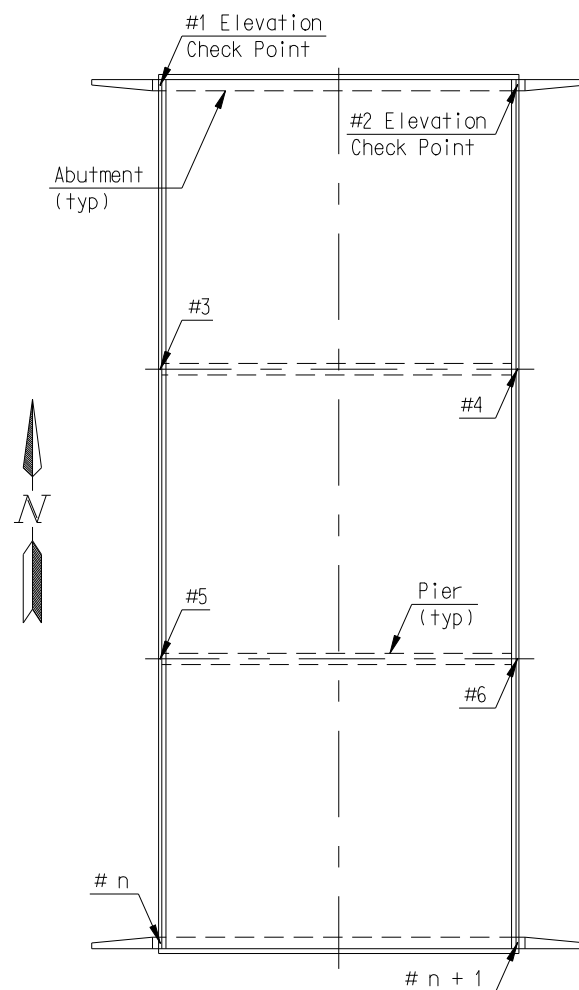


# BRIDGE BENCH MARKS

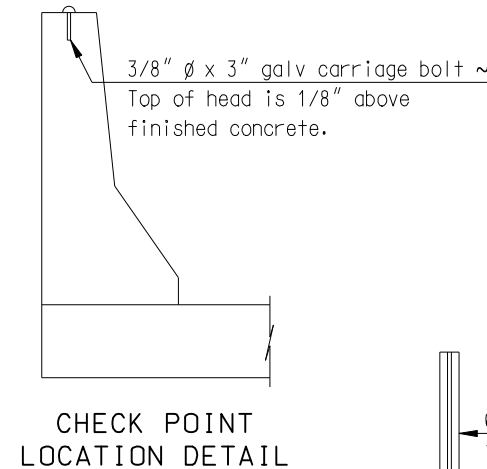
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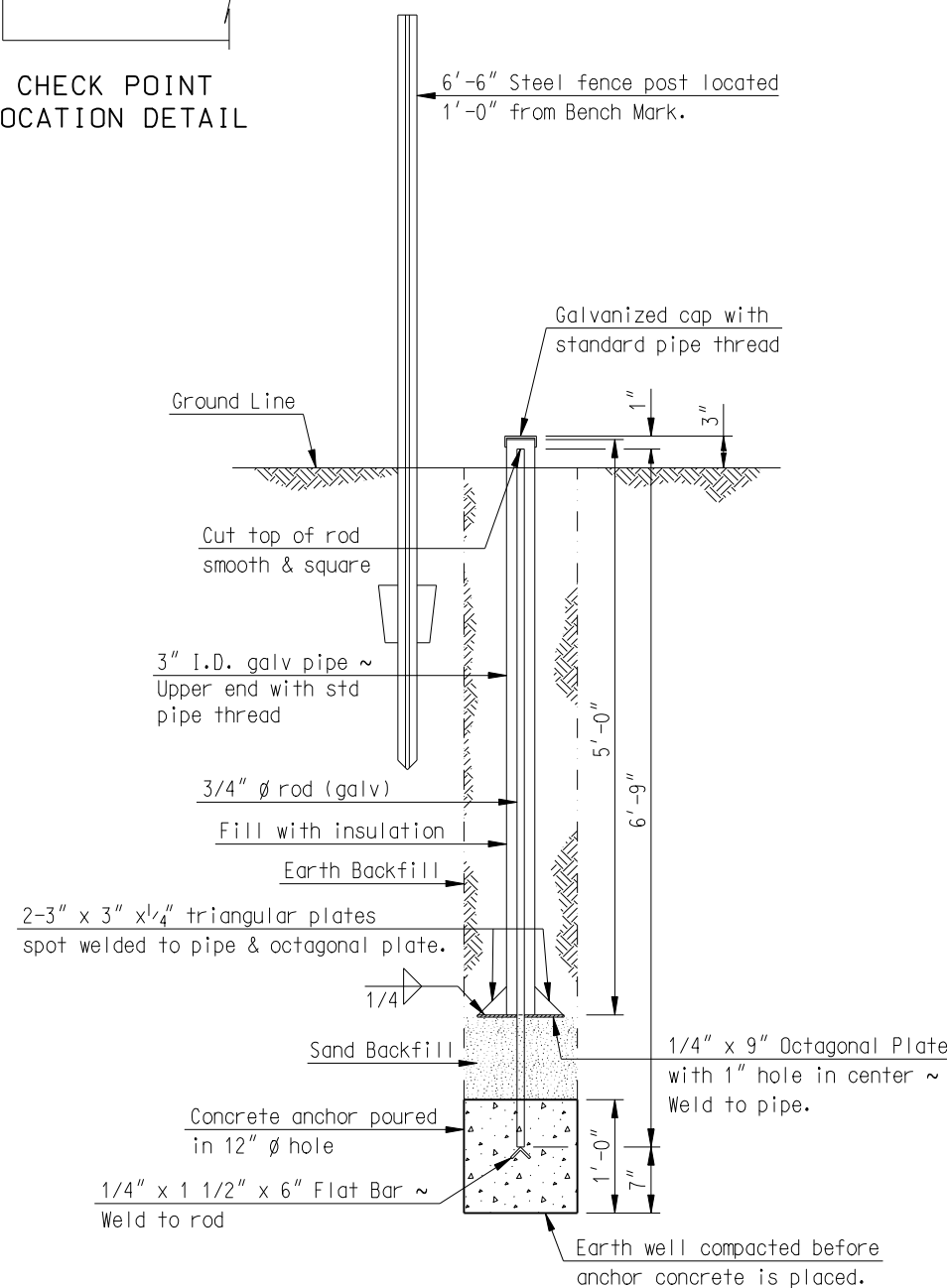
GENERAL LAYOUT FOR SINGLE SPAN



GENERAL LAYOUT FOR MULTIPLE SPAN



CHECK POINT LOCATION DETAIL



BENCH MARK DETAIL

## NOTES:

Elevation check points shall consist of 3/8" x 3" galvanized carriage bolts (or equal) set in the concrete barrier at the points indicated on the General Layout Sketches. The top of the bolt head shall project above the finished concrete 1/8". Elevation check points shall be placed on each barrier over each unit of the substructure for each bridge at a structural location.

Two bench marks as detailed hereon shall be set at diagonal opposite positions away from the structure location and at least 300 feet from the nearest point on the bridge or bridges (if more than one at a location). These bench marks shall be constructed as detailed on this sheet and located near the Highway Right-of-Way lines. The steel fence post shall extend 4'-0" above ground and be painted with two coats of white paint suitable for steel surfaces.

The Project Engineer shall run a set of levels determining the elevation of each check point on the structure and the two bench marks immediately after the completion of the bridge. This information shall be submitted to the Bridge Engineer with adequate information locating each check point and bench mark.

Except for fence posts, all metal parts are to be hot dip galvanized after punching, shearing, welding and fabrication.

Threads of cap and pipe are not to be galvanized. At the time of installation these threads are to be coated with grease and cap screwed to a snug fit.

## METHOD OF MEASUREMENT:

Each set of Bridge Bench Marks consisting of two bench marks and the required number of elevation check points shall be considered as one unit for bidding purposes and the quantity to be paid for shall be the number of sets of bridge bench marks which have been installed complete in place and accepted by the Engineer.

## BASIS OF PAYMENT:

Bridge Bench Marks shall be paid for at the contract price bid for each set of Bridge Bench Marks, which price shall be full compensation for all excavation, backfill and clean-up, and for furnishing, hauling and placing all elevation check points, fence posts, galvanized pipe, caps, rods, sand backfill, concrete, rock equipment, tools and incidentals, including galvanizing, necessary to complete this item.

## GALVANIZING:

After fabrication the complete assembly shall be Hot Dip Galvanized.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		This document was originally issued and sealed by TERRENCE R UDLAND, Registration Number PE-2674, on 12/01/04 and the original document is stored at the North Dakota Department of Transportation
JUL 95		
REVISIONS		
DATE	CHANGE	
12-01-04	PE Stamp added	